

IN THE CLAIMS

1. (Cancelled)

2. (Original) A hydrocarbon synthesis The process, of claim 1 comprising:
forming a synthesis gas by reacting a combustible carbonaceous material with water and oxygen in a gasification reactor;
contacting the synthesis gas with a hydrocarbon synthesis catalyst and forming liquid hydrocarbons and tail-gas;
separating the tail-gas and the liquid hydrocarbons;
the additional step of removing carbon dioxide from at least a first portion of the tail-gas; and
mixing the carbon dioxide free tail-gas fraction first portion with the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst; and
recycling a second portion of the tail-gas back to the reactor.

3. (Currently Amended) The process of claim 1, further comprising the additional step of combusting a fraction third portion of the tail-gas and generating power from said the combusted fraction third portion.

4 – 5. (Cancelled)

6. (Currently Amended) A method for consuming a tail-gas produced in a hydrocarbon synthesis reactor, comprising:

~~The method of claim 5 comprising the additional step of removing carbon dioxide from at least a first portion-fraction of the tail-gas;~~

reacting a second portion of the tail-gas and a combustible carbonaceous material with water and oxygen at an elevated temperature to form the synthesis gas; and

mixing the carbon dioxide free tail-gas fraction first portion with the synthesis gas prior to reacting the synthesis gas with the hydrocarbon synthesis catalyst.

7. (Currently Amended) The method of claim 5, further comprising the additional step of combusting a third portion-fraction of the tail-gas and generating power from said the combusted-fraction third portion.

8. (Cancelled)

9. (New) The process of claim 2, wherein the water comprises steam.

10. (New) The process of claim 2, wherein the oxygen is selected from the group consisting of air and enriched air.

11. (New) The process of claim 2, further comprising removing acid gas from the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst.

12. (New) A hydrocarbon synthesis process, comprising:

forming a synthesis gas by reacting a combustible carbonaceous material with water and oxygen in a gasification reactor;

contacting the synthesis gas with a hydrocarbon synthesis catalyst and forming liquid hydrocarbons and tail-gas in hydrocarbon synthesis reactor;

separating the tail-gas and the liquid hydrocarbons;

removing carbon dioxide from at least a portion of the tail-gas;

mixing the tail-gas portion with the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst; and

combusting a second portion of the tail-gas.

13. (New) The process of claim 12, further comprising recycling a third portion of the tail-gas back to the reactor.

14. (New) The process of claim 12, further comprising removing acid gas from the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst.

15. (New) A hydrocarbon synthesis process, comprising:

forming a synthesis gas by reacting a combustible carbonaceous material with water and oxygen in a gasification reactor;

removing acid gas from the synthesis gas forming a treated synthesis gas;

contacting the treated synthesis gas with a hydrocarbon synthesis catalyst and forming liquid hydrocarbons and tail-gas;

separating the tail-gas and the liquid hydrocarbons;

removing carbon dioxide from at least a portion of the tail-gas;

mixing the tail-gas portion with the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst;

generating power from a second portion of the tail-gas; and

recycling a third portion of the tail-gas back to the reactor.

16. (New) The process of claim 15, wherein said generating power further comprises combusting the second portion of the tail-gas.